

El Mirador near Carpish, 2600-2700 m, rocky clay soil, tree 10 m, corolla yellow, 21 Mar 1980, Manuel Rimachi 4908; holotype, US.

G. rimachiana is a well defined species that fits into the section *Praegynoxys* Cuatr., characterized by having the floral and habit features of *Gynoxys*, except the alternate disposition of the leaves. The stellate hairs, characteristic of this species, are found also in some other unrelated *Gynoxys* and *Pentacalia* species being an uncommon feature. Nevertheless the stellate trichomes seems to be not sufficiently basic to support a generic or subgeneric rank for any group at the time being.

References

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MISCELLANEOUS NOTES ON NEOTROPICAL FLORA, XV. NEW TAXA IN THE ASTEREEAE.

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BACCHARIS KINGII Cuatr. sp. nov.

Frutex usque ad 1-1.5 m altus profuse ramosus ramis griseis striatis divaricatis, ramulis ascendentibus argute striatis glabris glanduloso-viscosis. Folia lineri-lanceolata sessilia utrinque angustata acutaque vulgo 10-22 mm longa 0.6-1.8 mm lata conspicuissime trinervata copiosissime glanduloso-punctata.

Capitula in pseudopaniculis cymosis brevibus terminalibus, ramulis alternis subpatentibus cymas 3-2 capitulis ferentibus vel monocephalis. Pedunculi teneri sed rigidi striolati glabri ad 1 cm longi vel capitulis subsesilibus tribus vel duobus glomeratis ad terminaciones ramulorum. Bractee subtendentes lineares folia similes sed breviores 7-2 x 1-0.2 mm.

Capitula mascula per anthesin corollis involucrem excedentibus subglobosa 6-6.5 mm alta 4-5 mm lata, 22-40 flores ferentia Involucrem ante et per anthesin in vivo phyllariis adpresse imbricatis ellipsoideum basi cuneata 5 x 3 mm, in sicco phyllariis leviter squarrosis conico-campanulatum 5 x 4-4.5 mm. Phyllaria gradatim imbricata 7-8 seriata; interiora fertilia vix exserta 3-2.3 x 0.5 mm lineari-lanceolata acutiuscula scariosa straminea abaxiale linea

media brunnescenti marginibus sursum eroso ciliolatis apice parvis pilis brevibus flexuosis; alia phyllaria sterilia conspicuissime pluri-imbricata chartacea rigida incurva vel concava straminea sursum dorsale brunneo-maculata margine scarioso subhyalino minute eroso aliquando apice ciliato, subinteriora 3-2.8 x 1.3 mm late oblonga obtusa, medialis ovalia circa 2 x 1.4 mm obtusissima, proximalia obtusa 1.8-1.5 x 1.7-1 mm, omnia abaxiale copiose glanduloso-punctata. Receptaculum conicum 1.3 mm diam muricatum tantum margine paleaceum reliquum nudum. Paleae scariosae lineares vel lineari-lanceolatae 2-2.5 x 0.2-0.3 mm. Corolla mascula eburnea 3.8-4 mm longa tubo 1.5-1.8 mm longo, limbo infundibuliformi profunde lobato lobis linearibus acutis 1.3-1.4 x 0.3-0.35 mm margine incrassatis glabris sed ad apicem adaxiale papilloso per anthesin recurvatis; parte media corollae sparsis pilis subclavatis glandulosis 0.04-0.07 mm longis antrorsis cellulis biseriatis. Antherae 1.5 mm longae basi auriculatae appendice oblonga attenuata subacuta hyalina 0.3 mm longa. Cellulae endotheciales oblongae nodulis parietalibus. Collum breve crassitudine filamentum aequans cellulis quadrangularibus. Grana pollinica tricolporata echinulata 0.020-0.025 mm. Stylus 4 mm longus apice bifurcatus ramis lanceolatis 0.5 mm abaxiale dense papilloso-pilosis papillis obtusis ad 0.1 mm longis. Nectarium cylindricum crassum apice cupulatum basim styli includens 0.3 mm altum. Ovarium rudimentum obsoletum sed basi cum annulo calloso cellulis quadratis pluriseriatis et parvis glandulis subglobosis munitum. Pappus circa 5 mm longus, setis uniseriatis strigosis distale dilatatis, basi incrassatis in annulo crassiusculo coalitis, interdum parvis setis subbiseriatis.

Capitula feminea cylindracea circa 5-5.5 mm longa 2.5 mm crassa 70-140 flores ferentia. Involucrum 4 mm altum phyllariis 6-7-seriatis. Phyllaria interiora 3-3.5 x 0.7-1 mm papyracea incurva oblonga obtusa vel subobtusa margine scariosa minute erosa ad apicem interdum ciliata, phyllaria medialis elliptica 2.5 x 1.2 mm, 2 x 1.3-1.4 mm, infima ovata 2.6-2.2 x 1.5-1 mm, omnia dorso maculata et profuse glanduloso-punctata. Receptaculum planum 1.3 mm latum muricatum et paleaceum. Paleae scariosae rigidae semiamplectentes 3-3.5 x 0.3 mm, subulatae acutae ad apicem lacerato-ciliatae, caducae. Corolla feminea capillari 1.5-2 mm longa apice inaequaliter obliquo vel eroso et pilosulo margine abaxiale magis elevato, tubo praecipue sursum copiosis glandulis crassis cylindraceis vel clavatis e cellulis biseriatis, 0.05-0.1 mm longis antrorsis subadpressis 0.05-0.1 mm longis. Stylus 3 mm longus corollam excedens ramulis oblongo-ellipticis 0.5 mm longis. Ovarium oblongum circa 1 mm longum strictum copiosis pilisantrorsis rigidis acutis vel bicuspidatis cellulari-geminatis 0.1-0.15 mm longis. Achaenia 1.4 mm oblonga 3 nervis plusminusve conspicuis copiose strigosa pilis geminis acutis vel bicuspidatis, basi angustata cum pediculo calloso crasso annulari cellulis quadratis 8-10 seriatis instructo. Pappus albidus circa 2.5 mm longus setis strictis rigidis strigosis apice acutis non dilatatis, basi crassiusculis in anulum coalitis.

Typus: Peru, Ancash, along highway #3 ca 6 Km N of Carhuaz, 2200 m alt. Shrub up to 1 m, flowers cream-colored, 03, 10 Jan 1982

R.M.King & G.L.Collins 9028; holotype, US. Lima, Prov. Huarochirí, arriba de Surco, cerca Matucana, falda cerro 2000-2100 m, arbusto 0.30-0.60 m, ♀, 21 May 1949 R.Ferreyra 6053; paratype, US. Other collections from USNH examined: López Miranda 0386 (♂), Macbride & Featherstone (♂), Goodspeed 33108, López Miranda 3223 (♀), George Barclay 2286 (♀), Ferreira 14588 (♀, ♂).

Baccharis kingii belongs to section Pseudobaccharis (Cabrera) Cuatr. being well distinguished from other members of the section by its small, irregularly paniculate inflorescences, shape and size of leaves and shape and composition of the capitula.

BACCHARIS Sect. PSEUDOBACCHARIS (Cabrera) Cuatr. sect. nov.

Pseudobaccharis Cabrera in part, Not. Mus. La Plata Bot. IX, 46: 246. 1944.

Frutices erecti foliis trinervis brevibus angustis paniculis terminalibus evolutis vel reductis et subracemiformibus, receptaculis femineis paleaceis. Typus sectionis Pseudobaccharis spartioides Hook & Arn. Cabrera, Heterothalamus spartioides Hook & Arn. Other species: Baccharis boliviensis (Wedd.) Cabr., B.tenella Hook & Arn., B.retamoides Philip. and other species not yet well known due to lacking female specimens.

BACCHARIS sect. PSILA (Philippi) Cuatr. sect. nov.

Psila Phil. Ann.Mus.Nac.Chile 7:36. 1891.

Fruticuli prostrati caespitosi vel pulvinati, foliis sessilibus linearibus parvis uninerviis vel enerviis. Capitula mascula solitaria terminalia vel pauca. Capitula feminea receptaculo paleaceo. Typus sectionis Psila caespitosa Phil.=Heterothalamus acaulis Wedd. ex Fr.=Baccharis acaulis (Wedd.) Cabrera. Other species: probably B.davidsonii Cuatr.

LAGENIFERA Cassini

Lagenifera is a genus of 15 recognized species in a recent monograph (Cabrera, 1966), distributed in Southeast Asia, Malasia, Australia, New Zealand, Central America, North Andes and southern South America. Only 3 species were before known from tropical America making the section Pseudomyriactis Cabrera: L.panamensis Blake, from Chiriqui in Panama, L.andina Badillo from Venezuelan Andes and L.cuchumatanica Beaman & Jong from Guatemala. The explorations of the paramos of Costa Rica by A.S.Weston in 1969, who found four species of the genus in the region, indicate that the Costa Rican paramos are a center of speciation and radiation, adding two new species to Lagenifera plus a third, L.andina, only known heretofore from the Andes of Venezuela. It may be speculated that the Andean species was originated in the Costa Rican massif and

that this is the center of differentiation and radiation of the section *Pseudomyriactis*. From this massif the group may have radiated northwards to Guatemala and southwards to Chiriqui, Panama, and to the North Andes in Venezuela. *Lagenifera* was validly published by Cassini in Bull. Sciences on Dec., 1816, and was used by him until March, 1818 when he changed the name into *Lagenophora* which since has been largely and exclusively used. Nevertheless, according to the Int. Code of Nomenclature (Art. 73) the original spelling must prevail. Other already well known significant Compositae genera of this paramo complex are the monotypic *Iltisia* Blake and *Westoniella* Cuatr. represented by five endemic species. In this paper, three new species of *Lagenifera*, two of them from Costa Rica and one from Panama, all collected by A.S. Weston, are described.

LAGENIFERA WESTONII Cuatr. sp. nov.

Herba breviter rhizomatica probabiliter stolonifera foliis rosulatis. Rhizoma breve geotropum 3-4 mm diam nodulosum radices copiosas fasciculatas crassiusculas ad 15 cm longas valde radice-lliferas efferens radicellis tenuissimis longis divaricatis.

Folia rosulata herbacea viridia 7-11 cm longa petiolata et vaginata. Lamina ovata vel elliptica 4.5-5 x 2.5 cm, pinnatisecta, segmentis 4-5 utroque latere alternis ellipticis vel obovatis obtusis vel obtusissimis pinnatifidis vel lobatis, 15-10 mm longis, deorsum decrescentibus proximalibus simplicibus obovatis vel oblongis basi angustatis 8-4 mm longis; marginibus crassiuscule leviterque revolutis. Petiolus angustus rigidus 3-5 cm longus. Vagina robusta purpurea valde amplectens 1.5-2 cm longa. Folia tota densiuscule hirsuta pilis pluricellularibus uniseriatis acutis albis patulis, 0.5-1 mm longis, basi callosa-tuberculata in lamina notata, in vaginis pilis tantum ad margines valde copiosis longioribusque (1.5 mm).

Rami 1-8 axillares, basi prostrati ceterum ascendentes, 15-25 cm longi inferne robustiusculi obtuse sulcati superne angustiores striati viridi-purpureascentes vel purpurei, densiusculi-hirsuti, copiose foliati, tantum sursum 3-4 ramosi. Folia ramulorum sessilia vel proximalia pseudopetiolata, 6-1 cm longa, 1.5-0.4 cm lata sursum gradatim decrescentia, obovato-oblonga vel oblonga apice obtusa basi late amplectentia proximalia pinnatifidia medialia profunde lobata distalia lobato-dentata, lobis plerumque obovatis vel ellipticis; omnia profuse hirsutula. Ramuli 2-4, teneri patentibus parce bracteati, bracteis 6-3 x 2-1 mm oblongis obtusis integris vel paulo dentatis, copiose hirsutuli, 1-2 capituliferi, pedicellis gracilibus ad 25 mm longis breviter hirsutulis, pilis uniseriati-cellularis acutissimis patentibus rectis vel parce flexuosis 0.2-0.4 mm et glandulis crassiusculis teretibus biseriati-cellularis 0.1 mm longis.

Capitula semiglobosa circa 8 mm diametentia, laterale compressa 9 mm lata, circulo ligularum ad 12 mm diametro, 53-58 flores ferentia (in capitulo minimo 31 floribus). Involucrum cupulatum

basi subturbinatum phyllariis triseriatis membranaceo-herbaceis viridibus uninervis, glabris marginibus ciliatis exceptis ciliis 0.05-0.2 mm, exterioribus oblongis apice subite acutato 3.2-3.8 x 0.8-1.2 mm interioribus fertilibus 3.3-3.8 x 0.7 mm, magis tenuis subscariosis marginibus hyalinis lacerato-ciliatis. Receptaculum planum 2 mm diam glabrum areolatum areolis convexis.

Flores radii feminei circa 41-44. Corolla ligulata alba vel plusminusve purpurea, tubo crassiusculo 0.2 mm longo dense granulato-glanduloso, lamina elliptica obtusa minute 3-dentata, 2-2.3 x 0.7-0.8 mm ad basim abaxiale parvis glandulis crassis teretibus ad 0.1 mm longis cellulis biseriatis. Stylus 1 mm ramis lanceolatis 0.2 mm longis Achaenia immatura 2.5 mm longa 2-costato-marginata laterale compressa glaberrima obovata basim versus cuneato-attenuata basi acutata carpophoro calloso crasso pluri-stratoso, ad apicem subite angustata et in rostrum annularem 0.3-0.4 mm longum densissime granulato-glandulosum producta.

Flores disci hermaphroditi circa 12-14. Corolla 2 mm longa, tubo 0.5 mm glandulis biseriati-cellularis teretibus 0.05-0.08 mm longis circulatim dispositis, limbo turbinato-campanulato 5 lobis 0.8-0.9 mm longis triangularibus acutis apicibus papillosis. Antherae circa 0.7 mm basi rotundatae appendicibus apicalibus anguste oblongis acutis 0.15-0.2 mm longis. Cellulae endotheciales in parietis lateralibus noduliferis. Grana pollinica echinata 0.025 mm. Stylus 2.8 mm ramis 0.8 mm, lanceolatis abaxiale dense papilloso-pilosis. Achaenia immatura 2.3 mm longa obovato-oblonga basin attenuata acuta 2-costato-marginata compressa, basi annulum callosum cellulis pluri-stratosi, apice rotundato non rostrato tantum parvis glandulis biseriati-cellularis ad marginem munito.

TYPUS: Costa Rica, Cerro Jaboncillo 3200 m alt, rays numerous, white to dark red, 14 Aug 1969, Arthur S. Weston 5867; holotypus US. Another collection, Costa Rica: Valle de los Lagos, Chirripó massif, 3500 m, 7 Sept 1969, A.S. Weston 6064 (US).

Lagenifera westonii is essentially distinct from the other species of Section *Pseudomyriactis* Cabr. to which it belongs, for its deeply lobed leaf laminae, being the basal ones pinnatisect, and also for the lack of a beak in the ovary of the disk flowers. It furthermore, differs from *L. panamensis* Bl. by its habit, the lower number of flowers per capitulum and the oblong shape of the phyllaries, from *L. andina* by the abaxially glabrous phyllaries and longer tubular part of the ray corollas, from *L. cuchumatana*, it differs in addition by its polycephalous branches, higher number of ray flowers and more abundant indument.

LAGENIFERA SAKIRANA Cuatr. sp. nov.

Herba humilis breviter rhizomatica foliis rosulatis, probabiter stolonifera. Rhizoma rectum 2.5 cm longum circa 3 mm crassum geotropum radices tenues efferens.

Folia rosularia pauca herbacea firmula bene petiolata basi vaginantia; petiolus 10-12 mm longus basi in vaginam amplectentem producta; lamina ovata vel ovalis utrinque obtusa margine incre-

ssato dentato-lobato lobis obtusis vel subobtusis, penninervis nervis 3 utroque latere ascendentibus, adaxiale atroviridis abaxiale pallidior, utrinque copiose hirsuta pilis acutis basi callosotuberculata patentibus vulgo 0.5 mm longis in petiolo ad 1.2 mm longis.

Ramis floriferi monocephali axillares 4 in specimine 10-25 cm longi, erecti vel plerumque juxta basim patente arcuati ceterum erecti, teneres sed rigidi striolati purpurascentes parce puberuli pilis tenuibus acutis leviter flexuosis ad 0.5(-1) mm sparsis vel sparsissimis, aspectu subscaposi aphylli sed 3-8 bracteis parvis alternis sessilibus spathulatis vel anguste oblongis distale breviter dentatis vel integris basi amplectentibus proximalibus 15 x 5 mm sursum decrescentibus superne 3 x 0.5 mm, distale graciliter longe nudi.

Capitula semiglobosa 7-9 mm lata circulo ligularum 10 mm diam 40 flores ferentia. Involucrum cupulatum. Phyllaria 2-seriata oblonga 3.5-4 x 0.8 mm, herbacea viridia margine scarioso-hyalino eroso ciliato nervo medio unico parce ramoso, parca interiora angustiora.

Flores radii ligulati 25. Corolla rosea tubo 0.3-0.35 mm longo glabro vel parcis glandulis, lamina lineari-oblonga 3-3.2 x 0.7-0.8 mm apice 2-3-dentata. Stylus crassiusculus 1.7-2 mm ramis 0.35-0.40 mm lanceolatis glabris. Achaenia 2.3 x 1 mm obovata basin versus attenuata apice rotundata cum rostello 0.2 mm alto annulare dense granulato glanduloso munita, ovulata, 2-costato-marginata laterale compressa glabra, basi acutata callosa.

Flores disci 15. Corolla 2.5-2.8 mm longa glabra tubo 1 mm longo viridi-albo, limbo campanulato lobis purpurascensibus 0.6-0.7 mm triangularibus marginibus callosoincrassatis apice parce papilloso. Antherae 0.6 mm longae basi-rotundatae appendicibus apicalibus anguste oblongis 0.15 mm longis. Ovaria 1.6-1.8 x 0.8 mm ovulata 2-costato marginata complanato obovato-oblonga glabra apice obtusa non-rostrata basi angustata callosaque.

Typus: Costa Rica, Cerro Sakira 3300 m; basal leaves dark green with pustulate hairs on upper surface; rays numerous pink; disk flowers purple brown lobes, tubes and throats pale green, 14 Aug 1969 Arthur S. Weston 5834; holotypus, US.

Lagenifera sakirana (sect. *Pseudomyriactis* Cabrera) differs from the other Andean and Central American species by the subscapose flowering branches which are slender and only bracteate (not leafy) in their lower half or two third parts. From *L. panamensis* and *L. andina* it differs in addition by the shape of the leaves and indument, by the monocephalous subscares and fewer flowers on each head. From the more closely related *L. cuchumatana*, it differs by the hirsutulous adaxial side of the leaves, the glabrous abaxial side of the phyllaries, the longer tube and lamina of the ray corollas, the larger disk corollas and by the absence of an annular glandulose apical projection of the disk ovaries.

LAGENIFERA MINUSCULA Cuatr. sp. nov.

Herba pumila rhizomatosa foliis subrosulatis ramulis florigeris subscaposis. Rhizoma horizontale 1.5-2.5 mm crassum nodulosum plus minusve ramosum radices carnosulas subtenuas geotropas ad 10 cm longas efferens, ramulis rosulas paulifoliosas et scapos monocephalos gerentibus.

Folia rosularia petiolata plerumque glabra crassiuscule herbacea adaxiale atroviridia abaxiale praecipue ad margines et costam plus minusve purpurascens. Lamina elliptica vel oblongo-elliptica vel subspathulata apice obtusa vel subobtusa basi attenuata cuneata 7-10 x 2.5-4 mm; marginibus crenato-dentatis, dentibus plerumque 3 utroque latere subacutis antrorsis induratis-callois, costa abaxiale prominula, nervis laterales 2-3 ascendentes parum conspicuis. Petiolus robustiusculus adaxiale sulcatus abaxiale teres et purpurascens, 8-10 mm longus. Vagina circa 5 mm longa valde amplexans viridi-purpurascens, glabra vel interdum marginibus parvis pilis.

Rami floriferi pauci, tantum unus in specimine circa 3.5 cm longus tenuis basi arcuatus reliquo erectus purpureus subglaber tantum sparsissimis pilis 0.1-0.3 mm longis tenuibus subflexuosis obsoletis, foliis parvis bracteiformibus proximalibus 2-3 oblongis sessilibus leviter 2-3 dentatis 8 mm longis 1 mm latis, sursum gradatim minoribus parvis 5-3 x 0.2-0.1 mm linearibus, distale nudus. Capitulum unicum semiglobosum 4-5 mm latum circulo ligularum ad 9 mm diam, 27 flores ferens. Phyllaria 3 seriata exteriora oblonga subobtusa vel subite acutata herbacea purpurascens circa 2.5 x 0.5 mm margine anguste hyalino lacerato-ciliatoque medialia circa 3 x 0.5-0.6 mm, pallide viridia et purpurea nervio medio tantum notato, interiora subscariosa pallida angustiora 2.8-3 x 0.3 mm.

Flores radii 17 ligulati. Corolla alba 2.8-3.2 mm longa, tubo 0.4 mm longo glabro interdum parcissimis glandulis, lamina lineari-oblonga circa 0.6 mm lata apice obtusa 2-3 denticulata raro edentata. Stylus 1.3-1.5 mm longus ramis 0.2-0.4 mm acutatis glabris. Ovaria juvenilia obovato-oblonga vel oblonga vel elliptica obtusa 1.2-1.5 x 0.6 mm complanata apice rostro annulari dense glandulifero glandulis crassis oblongis cellulari-biseriatis, basi paulo angustata pluristrato-callosa.

Flores disci 10. Corolla lutea 2-2.2 mm longa glabra infundibuliforme campanulata lobis 0.6 mm longis oblongo-triangularibus acutiusculis apice papillosis. Antherae 0.9-1 mm longae saccis basi rotundatis, appendicibus 0.15-0.18 mm anguste ovato-oblongis. Cellulae endotheciales nodulis in parietis lateralibus. Collum filamentum isodiametricum 0.18 mm longum cellulis subquadratis. Stylus ramis lanceolatis exsertis 0.6 mm longis abaxiale dense longeque papilloso-pilosis. Ovaria 2.1 mm longa elliptico-oblonga glabra apice erostrato non glandulato.

TYPE: Panama, prov. Chiriquí: Cerro Fábrega (between Cerro Bine and North end of Cerro Fábrega ridge, near the Costa Rican frontier, south of summit, 3150-3335 m, rare; rays 16 white, disc yellow. April 7-8, 1976. Arthur S. Weston 10154; holotypus, MO.

Besides the small size of the whole plant, Lagenaria minuscula differs from the other species of sect. Pseudomyriactis by being glabrous or almost glabrous, by the monocephalous subscapose flowering branches with few small bracts in their distal part, by the small heads, 4-5 mm broad, with a total of 27 flowers with 16-17 white ray corollas, by the obconical campanulate disk corollas and by the erostrate glandular apex of the disk ovaries. The repent, branching, rather thin rhizome, probably tending to form caespitose tufts, may be another distinctive trait, but it is difficult to perceive with the scanty material at hand.

WESTONIELLA LANUGINOSA Cuatr. sp. nov.

Suffrutex erectus circa 30 cm altus sursum ramosus, caule inferne simplex exfoliato cortice griseo sublaevi sed plus minusve fissurato, glabrato cicatricibus foliorum delapsorum 2-4 mm distantibus. Rami erecti fere fastigiati dense foliati, basibus foliorum subimbricatis, internodiis 1-2 mm longis copiose glandulosis glandulis globoso-pediculatis et parce hirtulis.

Folia sessilia alterna. Lamina crassiuscule herbacea 7-12 x 1.8-2.2 mm, oblonga apice acuta basi ampliata subauriculato-amplexicaulis, apiculum et 1-3 paribus dentium minutis callosis acutis antrorsis; sed marginibus plerumque convolutis folia habitu linearia 1-1.5 mm lata; adaxiale tantum costa impressa plusminusve notata superficie cinerea vel albida tota densiuscule glandulata glandulis minutis globosis sessilibus et majoribus breviter pediculatis, plus pilis brevibus patulis acutis sparsis et pilis tenuissimis 0.01-0.015 mm diam. longissimisque albis intricatissime arachnoideo-lanatis, abaxiale costa valde prominenti venis minoribus laxe reticulatis prominulis plerumque parum notatis, superficie etiam glandulifera et albolanuginosa.

Capitula 3-5 corymbiforme disposita ad extremos ramulorum dense foliatorum. Pedicelli 3-10 mm longi albo-lanati. Bracteis supremis ramusculorum vel bracteolis 9-6 x 1.2-1 mm linearibus albo-lanuginosis.

Capitula 9 mm diametro 7-8 mm alta. Involucrum cupulatum 5-6 mm altum. Phyllaria circa 4-seriata subaequalia, interiora 5-5.4 mm longa inferne 0.7-1 mm lata, lineari-lanceolata acutissima, subherbacea anguste hyalino-marginata dorso purpurea glabra distale lanuginea, exteriora leviter breviora dense albo-lanata pilis crassiusculis uniseriatim multicellularibus 3 mm longis 0.05 mm crassis patentibus sed flexuosissimis intricatisque interdum ad basin parvis glandulis marginalibus. Infra involucrum bracteolis cum phyllariis similibus etiam spisse piloso-lanatis plurimis ad modum calyculum dispositis. Receptaculum planum minute alveolatum 4 mm diametro.

Flores radii feminei 102 in capitulo. Corolla 4-4.3 mm longa anguste tubulosa inferne capillaris sursum vix ampliata parte media glandulis cellulari-biseriatim 0.5-0.1 mm longis, oblongis vel subclavatis sparsis vel copiosis, apice contracta adaxiale 0.25-0.3 mm fissa vel oblique truncata abaxiale plerumque 3 dentibus obtusis

interdum lobo laterali plus minusve conspicuo. Stylus strictus inclusus basi breviter bulbosus apice duobus ramis 0.5 mm lineari-lanceolatis teneris marginalibus minute stigmatico-papillois. Achaenia 1.8-2 x 0.7-0.9 mm obovato-elliptica argute bicostata leviter compressa uno latere uninervo apice obtusissima basi subite acutata distale parvis pilis geminatis bicellulatis rigidis acutis circa 0.15 mm erecto-patentibus. Pappus circa 4-4.5 mm longus albus pilis uniseriatis strigosis sursum haud dilatatis.

Flores disci pseudohermaphroditi 40 in capitulo. Corolla tubulosa violacea 4.8-5 mm longa parte media sparsis vel copiosis glandulis biseriatis cellulatis oblongis vel subclavatis 0.05-0.1 mm longis, limbo anguste infundibularis violaceo lobis brevibus triangulatis 0.4-0.5 mm altis apice papillosulis dorso sursum parvis glandulis oblongis vel clavatis 0.05-0.07 mm ornatis. Antherae 1.5 mm longae basi obtusae appendice oblonga attenuata 0.3-0.35 mm longa. Grana pollinica echinata 0.025-0.030 mm diametentia. Collum cylindricum circa 0.5 mm longum cellulis quadratis vel oblongo-rectangulatis. Stylus ramis 0.6-0.7 mm lanceolatis extus dense papilloso-pilosis papillis circa 0.05 mm obtusissimis erecto-patentibus. Ovaria 1.2-1.3 mm longa anguste oblonga 3-4 nervata sterilia tantum uno latere parce pilosula pilis bicellularibus rectis rigidis acutis 0.1 mm longis. Pappus pilis uniseriatis strigosis 4.5-5 mm longis sursum haud vel parum ampliatus.

TYPUS: Panama prov. Chiriquí: Between Cerro Bine and North end of Cerro Fábrega, near the Costa Rican frontier, 3150-3335 m alt; rare, only found on Cerro Fábrega ridge. Ray florets tubular, 7-8 Apr 1979, Arthur S. Weston 10169; holotypus, MO.

Westoniella lanuginosa is related to the two species (*W. kohkemperi* and *W. eriocephala*) of the first couple of the key (Cuatrecasas 1977), and may be included in it with some modification. Differs from those two species by the shorter size and shape of the leaves (7-12 x 1.8-2 mm) and by the indument of the blades, which are adaxially copiously glandular and rather densely white-lanugineous. This species is the first record of the genus outside of Costa Rica meaning an extension of the known area of *Westoniella* to the northern mountains of Panama.

DIPLOSTEPHIUM SANTAMARTAE Cuatr. sp. nov.

Arbor ad 5 m alta ramis terminalibus subteretibus cicatricosis internodiis 5-10 mm longis dense adpresseque sublanatis pilis brevibus crassiusculis flexuosis valde intricatis et adpressis flavecenti-albidis.

Folia alterna petiolata. Lamina coriacea rigida ovata vel oblongo-ovata basi obtuse cuneata sursum leviter attenuata subacutata apice mucronato, 7-10.5 cm longa 3.2-4.5 cm lata, margine revoluta integra vel minutis dentibus mucronulatis obsoletis, adaxiale viridis in adulta glabra nervis obsoletis, abaxiale albido-ochroleuca minutis pilis flexuosis intricatissimis valde adpressis omnino tecta, costa crassa elevata nervis secundariis 17-20 utroque latere prominentibus patentisque nervulis tertiis prominulis laxe

reticulatis. Petiolus 2-3 cm longis fere robustus adaxiale canaliculatus abaxiale marginibusque dense adpressissimeque minutilanus, basi leviter ampliata vaginantis.

Inflorescentiae paniculatae axillari-subterminales foliis adultis supremis brevioribus, axi ramisque dense adpressissimeque lanatis ochroleucis leviter striatis. Pedicelli in specimine ad 7 mm longi adpresse ochroleuco-lanati. Bracteolae subtendentes minutae virides subulatae acutae ad 1 mm longae.

Capitula campanulata basi obtusa 7.2-9 mm alta 4.5-5 mm diametientia radiata. Involucrum circa 5.5 mm altum, purpureo-rubescens. Phyllaria gradatim imbricata 5-seriata chartacea rigidula, interiora 4.7-4.2 x 0.6-1.3 mm ovali-lanceolata acuta vel acutissima, marginibus minute serrulatis sursum ciliolatis, dorso distale dense vel copiose glandulata et parcis pilis subflexuosis, medialis ovato-oblonga usque ovata 4-3 x 1.5-2 mm subacutata vel subobtusa, proximalia 3-2 x 2-1.2 mm rigida concava ovato-triangulata subacuta. Receptaculum conicum alveolatum marginibus alveolorum crassiusculis obtuse dentatis, glabrum.

Flores radii feminei 8-10 in capitulo. Corolla ligulata 5.5-6 mm longa, tubulo 4-4.2 mm parte media et distale copiosis pilis crassis 2-seriati-cellulatis glandulosis subpatentibus ad 0.05 mm longis; lamina 2.5 mm longa elliptica vel oblongo-elliptica 0.5-0.7 mm lata basi adaxiale acute aperta, apice obtusa breviter 2-3-dentata, dorsale dense conspicueque brevopilosa praesertim ad dimidiam inferiorem partem sed etiam sursum pilis crassis biseriati-cellulatis glandulosis, adaxiale mamillato-papillosa subvelutina. Stylus 4-5 mm longis ramis 0.6-0.7 mm oblongis obtusiusculis apice attenuatis subacutis marginibus adaxiale late stigmatosis. Ovaria fertilia 1.8 mm longa oblonga plerumque tantum 3 nervis conspicuis dense antrorso-hispida pilis gemini-cellulatis 1-2-cuspidatis 0.5 mm longis. Pappus rubescens circa 4 mm longus pilis scabrosis biseriatis interioribus sursum dilatatis exterioribus brevioribus 1-2 mm longis acutis.

Flores disci pseudohermaphroditi 31-35 in capitulo. Corolla 4-4.2 mm longa praecipue in parte media pilosula pilis crassis clavatis ad 0.1 mm longis, tubulo angusto circa 1.5 mm longo, limbo inferne angusto sursum parce ampliato apice parum constricto, dentibus triangularibus 0.6 mm longis enervis marginibus incrassatis et praecipue adaxiale dense papillosis, extus copiose glandulifero glandulis globosis vel obovatis crassis. Antherae 1.2-1.3 mm longae base obtusiuscule auriculatae appendice apicali 2.5-3 mm longa oblongo-elliptica obtusa. Cellulae endotheciales oblongae nodulis ad parietes laterales seriatae. Collum cylindricum filamento parum crassius 0.45-0.50 mm longum cellulis seriatis quadratis vel sursum oblongo-quadratis. Stylus ramis 0.7-0.8 mm longis complanatis lineari-lanceolatis acutis abaxiale marginibusque dense papilloso-hirtis papillis obtusis antrorsis ad 0.08 mm longis. Ovaria anguste oblonga trinervata sterilia dense longeque hispida pilis antrorsis geminati-cellulatis acutis. Pappus illis radii similis.

TYPUS: Colombia, Magdalena: Sierra Nevada de Santa Marta, "Transecto del Rio Buritaca" 3000 m alt, arbolito 3 m, bráctees e

involucro de color vino tinto, hojas haz verdosas envés amarillo pálido, Aug. 1977, O. Rangel & A.M. Cleef 928; holotypus COL. Circa Laguna de Rio Frio on the way from San Pedro de la Sierra, via Pico José Hilario, 3450 m, tree 5 m, disk flowers dark red, ray flowers yellow undersurface of leaves white pubescent, 31 Jul J.H. Kirkbride & R. Forero 18108; paratype, US.

Diplostephium santamartae belongs to Series Denticulata Blake and is closely related to *D. grantii* Cuatr. from the Sierra de Perijá. The Santa Marta species may be easily distinguished by its ovate, broader and obtuse or subobtuse leaves at base, by the purplish red involucre with wider phyllaries, by the ligules densely glandular abaxially, the disc tubular corollas with short triangular teeth only 0.6 mm long, and the reddish pappus. In contrast, *D. grantii* has leaf-laminas oblong-elliptic acutely cuneate at base, stramineous greenish involucre, ligules non glandular, disk corollas with long linear lobes 1.8-2 mm long and pale yellow pappuses.

DIPLOSTEPHIUM SERRATIFOLIUM Cuatr. sp. nov.

Frutex ramulis terminalibus foliatis teretibus dense adpresseque cinereo-lanatis. Folia alterna coriacea petiolata. Lamina 1.5 cm longa 0.7-1.1 cm lata elliptica apice obtusiuscula basi cuneata margine dentato-serrulata dentibus 1-2 mm distantibus antrorsis argute callosomucronatis, adaxiale viridis rugulosa praecipue juvenilis tenuissime lanuginea, abaxiale conferte adpresseque cinereo-lanata costa prominenti conspicuissima nervis secundariis 8-9 utroque latere erecto-ascendentibus prominulis, reticulo venulorum cum indumento velato. Petiolus 5-8 mm longus adaxiale planus subtus teres, dense cinereo-lanatus. Capitula longe pedunculata in paniculis terminalibus laxis oligocephalis disposita, ramis 4-5, alternis erecto-ascendentibus dense adpresseque cinereo-lanatis. Bractee subtendentes proximales foliaceae reliquae sursum breves bracteosae lanceolatae vel lineares 6-3 mm longis. Pedunculi erecti teretes 1.5-2.5 cm longi adpresse tomentoso-lanati.

Capitula longiradiata circa 12 mm alta 8-9 mm crassa circulo ligularum 30-40 mm diametro circa 80 flores ferentia. Involucrum cupulato-campanulatum 8-8.5 mm altum pallide stramineo-viride, phyllariis 5-6-seriatis imbricatisque, interioribus 8-8.5 mm longis x 0.9-0.8 mm latis, lineari-lanceolatis acutissimis margine scarioso-translucidis eroso-ciliolatis apice barbato-ciliato, mediis similibus gradatim brevioribus infimis lanceolatis circa 3 mm longis 0.8-0.9 mm latis. Receptaculum planum sed ad centrum leviter protrudum, 3 mm diam minute alveolatum glabrum marginibus alveolorum crassiusculis obtusis nudis.

Flores radii circa 32. Corolla ligulata fortasse purpurascens 28-30 cm longa, tubulo 3-4 mm longo angusto sparsis pilis crassiusculis glanduloso-capitatis biseriati-pluricellularibus ad 0.2 mm longis, lamina lineari tenuissima infirmissima in statu flaccido flexuosissima 2-2.2 mm lata 4-5-nervata abaxiale inferne parvis pilis glanduliferis adaxiale minute denseque mamillato-papillosa. Stylus 6 mm longus basi bulbosa ramis 1.4-1.7 mm longis complanatis

sublanceolatis marginibus incrassatis stigmatico-papillosis. Ovarium 2 mm longum oblongo-ellipticum costato-marginatum fertile copiose hispidum et densiuscule glandulosum, setis gemini-cellularis patentis-erectis acutis bicuspidatis rigidulis 0.2-0.5 mm longis, glandulis globosis pediculatis biseriati-cellularis 0.04-0.06 mm longis. Pappus 4.5 mm longus albido-stramineus setis scabridis interioribus sursus leviter ampliatus exterioribus numerosis squamiformibus 0.3-0.5 mm longis.

Flores disci hermaphroditi circa 57 in capitulo. Corolla 6.5-7 mm longa, tubulo 2.2-2.5 mm longo media parte distali copiosis pilis crassiusculis glanduloso-capitatis biseriati-cellularis 0.1-0.3 mm longis antrorsis, limbo tubuloso ad apicem purpurei inferne sparsis pilis glanduliferis, lobis dentiformibus triangularibus 0.7-0.8 mm longis marginibus incrassatis papillosisque abaxiale sursum parvis glandulis obovoideis biseriati-cellularis subsessilibus vel breviter pediculatis. Antherae 2.6-2.7 mm longae basi obtusiusculae appendice 0.7-0.8 mm longa anguste oblonga subacuta. Collum 0.40-0.45 mm longum cum filamento crassius cellulis breviter rectangularibus longitudinaliter seriatis. Stylus 7-7.5 mm longus basi bulbosus ramis 1.5 mm complanatis linearibus sursum attenuatis marginibus stigmatico-papillosis, parte distali lanceolata extus margineque papilloso-pilosa. Ovarium obovato oblongum costato-marginatum plerumque fertile ad costas setis gemini-cellularis erecto-patentibus rigidis acute bicuspidatis, faciebus densiuscule glanduliferis basim densius barbatum pilis gemini-cellularis rigidis 0.1-0.4 mm. Pappus 5-5.5 mm longus setis interioribus parce dilatatis acutis, exterioribus squamiformibus-copiosis 0.4-0.8 mm longis.

TYPUS: Peru, Cajamarca, Contumaza, circa Contumaza, 2700 m alt, Jun 1960, Asencio Alza s.n.; holotypus, LP.

D. serratifolium is a rare species of *Diplostephium* easily distinguished by its serrate rather small leaves. Its relationships must be sought among species of the series *Rupestris* Bl. in the Peruvian and Bolivian area, like *D. haenkei* (DC.) Wedd. *D. pulchrum* Blake, etc. From all it differs by its relatively long-petiolated elliptic rugose, sharply serrulate leaves, by the basically stramineous involucre, pale pappuses and details of flowers. The slenderness of the long ray corollas seen in wetted material is very pronounced becoming extremely soft, pliable, and hyaline. Other parts of the flowers (disk corollas, styles, anthers, filaments) are likewise slender, much thinner than in any other species. The branches of the styles in the disk flowers are flattened with marginal stigmatic papillae except for the acute distal part which is papillose-hispidulous; in *D. haenkei* they have also stigmatic lines, but they are shorter than in *D. serratifolium*. This species differs also from *D. haenkei* and *D. pulchrum* by its costate-marginate, copiously glandular ovaries.

References

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